NOTE XIX.

ON MALAYAN SPECIES OF THE GENUS PSAMMOLYCE

BY

Dr. R. HORST.

Worms belonging to the genus *Psammolyce*, that are characterized by having their elytra and the median part of their back covered with papillae, adapted for the retention of small particles of the bottom upon which they are living, hitherto were not observed in the Malay Archipelago. Yet the Siboga-expedition had the good luck to collect a number of them (though often in fragments), that certainly represent three species. However it is no easy task to recognize the characters, offering a trustworthy criterion for the distinction of the species. With regard to the elytra f. i. Willey says: „they are not safe objects for comparison, since they vary from segment to segment" 1); however Potts rightly stated, that certain features of the elytra as a whole are certainly characteristic for a group of species 2). In *Psammolyce arenosa* 3) and its allies f. i. the elytra are provided with two lobes at their median corner and another lobe at the posterior margin, whereas in an other group of species [*Ps. fijiensis* 4), *-occidentalis* 4)

---

1) Ceylon Pearl-oyster-fisheries report: Polychaeta, p. 257.

2) The Percy Sladen Trust expedition: Polychaeta of the Indian Ocean, p. 346.

3) De St. Joseph, Annélides de St. Jean de Luz: Ann. Sc. nat. Zoologie (S. 9) t. III, 1906, pl. I, fig. 23.

4) Mc Intosh, Challenger Annelida, pl. XXII, figs. 4 and 5.

and *-malayana*] the first pair of elytra are strongly elongated, giving to the head a snout-like appearance. Moreover the structure of the neuropodial setae affords good material for the discremination of the species, as f. i. *Ps. flava* [1]) is easily recognized by this single character, and also the appearance of the dorsal cirrus of the third segment may be different in some of the species. Unfortunately the earlier naturalists have not always described these different characters with sufficient conciseness.

Psammolyce zeylanica Willey.

Siboga-expedition, Stat. 43, anchorage of Pulu Sarassa (Postillon-islands); Stat. 49a, Sapeh-strait; Stat. 133, anchorage off Lirung, Salibabu-island; Stat. 313, anchorage east of Dangar besar, Saleh-bay; Stat. Ambon, reef; Stat. Banda.

At the above-named Stations individuals of a *Psammolyce*-species were met with, that belong to the group of *Ps. arenosa* D. Ch. and in many regards agree with Willey's description of *Ps. zeylanica*, though some slight differences could be stated. The largest specimen (of Stat. Ambon) measures about 100 mm. in length and its greatest breadth (with bristles) amounts to 12 mm. The ventral side of the body usually is hairy, though not more conspicuously in the vicinity of the mouth, as f. i. is to be seen in *Ps. malayana* (see later on); even in the specimens of Stat. Banda the anterior region of the venter shows so few filiform papillae, except at the base of the parapodia, that in this point they more resemble *Ps. rigida* Gr. (Willey, loc. cit. p. 256).

Examined with high power the venter appears to be coated with long, pointed, somewhat spinous processes, that are dilated at the base, whereas small globular tubercles are situated between them. The first pair of elytra is elongated, rounded triangular, with the internal border

---

1) Kinberg, Annulata, Kgl. Svenska Freg. Eugenies resa, pl. IX, fig. 44.

nearly straight; posteriorly the elytra become notched and lobed, especially at the median side. Usually two lobes occur at the internal corner and a large tubercle at the posterior margin. Their anterior border is smooth, but along the entire posterior margin long filiform papillae are situated; on the external border they are separated in groups, whereas short, cup-shaped papillae occur in the intervals between them. The scar of insertion is elongated, elliptical. The dorsum between the elytra is beset with rather long filiform papillae, arising from the tip of a short common stem, like in *Ps. arenosa* (St. Joseph, loc. cit. pl. 2, fig. 26). The tentacle of the head has a terminal joint, at the most one and a half as long as its basal part, and a trifle shorter than the tentacular-cirri, whereas, according to Willey, it should measure thrice its length. In the second segment the neuropodial fascicle consists of compound setae with plumose shaft and slender, elongated appendix, with filiform curved apex as figured by Willey (loc. cit. fig. 36); however the figure does not show that they are clearly serrated along the inner border. The third segment has a dorsal cirrus with a curved terminal joint, somewhat shorter than its peduncle. In a normal parapodium the central group of ventral bristles have a stout, short appendix, usually not bifurcated, and a squamous shaft with semilunar cusp below the apex (Willey, loc. cit. pl. II, fig. 43); sometimes however the cusp is absent or faintly developed and then the setae more resemble those of *Ps. rigida* 1). The inferior setae of the fascicle are more slender, with an elongated, bifurcated appendix.

---

1) In his „Neuseeländische Anneliden" (p. 13) Ehlers suggests that Grube under the name of *Ps. rigida* has united two closely allied species or two varieties of one species, the one an occidental form (belonging to the Red Sea), the other one with a more oriental distribution (Philippines and New Zealand). Therefore the name of *Ps. rigida* ought to be maintained for the erythraean form, whereas for the other one should stand the name of *Ps.* (*Pelogenia*) *antipoda*, proposed by Schmarda; unfortunately Ehlers himself gives no detailed description of the bristles of the last named species.

Psammolyce flava Kinberg [1]).

Siboga-expedition, Stat. 5, anchorage of Djangkar (Java), at a depth of 330 M. A single incomplete specimen, measuring about 50 mm. in length, with 90 segments.

Though *Ps. flava*, according to Kinberg, at first was found in the Atlantic near Rio Janeiro, I do not hesitate to identify the Siboga-specimen with that species, on account of the characteristic shape of its neuropodial setae [2]). For the appendix of those bristles somewhat resembles the bill of a grallatory bird, being long, acuminate, faintly bent, with a median fissure till about the middle of its length; they quite agree with the description and figures of Kinberg, only some transverse ridges of the shaft in the neighbourhood of its distal extremity are overlooked by him. The joint between the shaft and the appendix is not always very obvious; even in some of the setae it is totally wanting and then both are melted together. The appendix in the superior, the inferior and the median bristles of this fascicle does not show such differences in length as in other species of the genus. The neuropodium of the second segment possesses setae of the same kind, but they are more slender and the spinous rows of the shaft are more strongly developed; moreover this neuropodium bears at its distal extremity, besides the usual filiform papillae, a long cylindrical appendage, with a club-shaped end. With regard to the prostomium I found in the Siboga-specimen the palpi not so long as figured by Kinberg; they hardly extend beyond the distal extremity of the setae of the buccal segment. The tentacle is absent. Kinberg mentions two large eyes at the base of this organ; he says, they are „parum conspicui", but I could not detect them.

---

[1]) loc. cit. p. 3, pl. IX, figs. 44, A—H.

[2]) Also in other zoological groups examples of such a wide geographical distribution are to be found; Hoek f. i. mentions, that *Poecilasma carinatum* and *Scalpellum acutum* are dredged in the Malay Archipelago as well as in the Atlantic (The Cirripedia of the Siboga-expedition, pp. XIII and XIV).

In the anterior segments the ventral side of the body as well as the middle of the dorsum are smooth, without papillae and accordingly the coating with grains of sand also is nearly absent. Also the elytra are not so densely covered as usually and their boundaries are more conspicuous, therefore the worm has a less compact appearance and a looser structure, like most of the deep-sea worms. In the remaining part of the body the venter is densely covered with papillae, all of the same length, giving it a verrucous appearance. In the anterior segments the elytra have the anterior border concave and smooth, whereas the remaining margin is beset with rather long filiform papillae, that also are found on their upper surface. In the segments that are situated more posteriorly, the anterior border of the elytra is straighter, whereas their median part is lobe-like elongated and a great number of papillae are found on the external part of their surface.

Ps. Kinbergi Hans., also found in the neighbourhood of Rio Janeiro, that I myself had the opportunity to examine, is quite an other species, allied to *Ps. arenosa* as to the appearance of the bristles, of the dorsal cirrus of the third segment etc.; unfortunately the figures given by Hansen are not very accurate.

Psammolyce malayana, n. sp.

Siboga-expedition, Stat. 81, Pulu Sebangkatan, Borneobank; Stat. 133, anchorage off Lirung, Salibabu-island; Stat. 153, N. W. off Waigeu-island; Stat. 204, Buton-strait; Stat. 313, Saleh-bay, Sumbawa.

This worm belongs to those *Psammolyce*-species (like *Ps. fijiensis* and *Ps. occidentalis*), that have the anterior extremity of the body snout-like elongated, on account of the extraordinary length of the first pair of elytra. The species appears to be very brittle, for only the anterior portion of the body of the various specimens is preserved; perhaps the posterior body-region is buried into the bottom of the sea. The entire dorsum is covered with coarse grains of sand, with the shells of Foraminifera, with spicules of Alcyonaria and Sponges, with pieces of the shells of Echinoidea and Molluscs. The ventral side of the body is hairy, on account of the presence of long, slender papillae, especially in the vicinity of the mouth, that is almost entirely hidden by them. The venter as well as the bristles are of an ochreous hue. The first pair of elytra have an elongated, elliptical shape, with a concave, wing-like lobe at the anterior part of their median border; besides along this lobe, the whole margin is beset with filiform papillae. The right elytron somewhat overlaps the left one, but they diverge with their anterior part, which makes the tentacle and the bristles of the buccal segment visible. The other scales are semi-circular, with a straight anterior border and a conical lobe at their internal angle; their posterior margin is beset with filiform papillae, that are the longest at the external side, where they are separated in 3 or 4 groups by small cup-shaped papillae. The cephalic lobe bears on its dorsal side a pair of distinct black eyes, almost hidden under the nuchal fold and another pair of larger ones beneath it. The tentacle has a distal part, about twice as long as the basal one; its tip is swollen and extends about till the extremity of the bristles of the first segment and the tentacular cirri. The basal part is furnished on each side with a small semilunar wing. The palps are slender, smooth, tapering distally and extending nearly as far as the bristles of the second segment. The neuropodium of the second segment has a club-shaped prolongation; its bristles are articulated, with a very slender process with curved tip. The dorsal cirrus of the third segment has a short basal part and a long whipshaped terminal portion, that reaches as far as the palp. In the neuropodium of the succeeding feet the central bristles of the fascicle are furnished with a rather long, not stout, bifurcated terminal process; their shaft bears in its distal portion a number of faint transverse ridges. The superior bristles of this fascicle, that bear a more slender appendix, have the shaft furnished with obvious transverse ridges, whereas these are very faintly developed in the slender inferior bristles.

Though undoubtly closely allied to *Ps. fijiensis*, the Siboga-specimens could not be identified with it on account of the swollen tip of the tentacle and the tentacular cirri, of the whip-shaped terminal appendix of the dorsal cirrus of the third segment and the different structure of the bristles, the shaft of which in some of them is furnished with prominent, transverse ridges.

Leyden Museum, September 1913.